

### DESCRIPTION

Pfu DNA polymerase is purified from E. coli carrying a vector with the gene encoding Pyrococcus furiosus DNA polymerase. It has an intrinsic 3' to 5' exonuclease activity. It is a highly accurate DNA polymerase than Taq DNA polymerase (about 10-fold).

### APPLICATIONS

- High-fidelity PCR and primer-extension reactions.
- PCR products for cloning and expression.
- PCR cloning and blunt-end amplification.
- Gene synthesis.
- Site-directed mutagenesis.

### KEY FEATURES

- **High fidelity PCR:**  
Proofreading activity with 3' → 5' exonuclease.
- **High specificity:**  
Better specificity than Taq DNA polymerase with reduced chance of non-specific products.
- **Terminal transferase activity:**  
Guaranteed blunt-ended PCR product by blocking terminal transferase activity.

### KIT CONTENTS (500 U)

Part	Size
Pfu DNA Polymerase (5 U/ μL)	100 μL
dNTP Mix (2.5mM/each)	0.5 mL
10 X Pfu Reaction buffer	0.8 mL
HQ buffer	0.5 mL

**Storage conditions:** The undiluted enzyme solution is stable when stored at -20°C. Shelf life: 12 months after receipt.

### General protocol using Pfu DNA polymerase:

1. Thaw all the reagents for PCR on ice. Vortex to mix fully and then spin down briefly.
2. Set up 50 μL PCR reaction in a microPCR tube on ice by adding the following components:

Part	Volume(μL)
10 X Pfu Reaction buffer	5
(Optional: HQ buffer)	5-20
dNTP Mix (2.5mM/each)	4
Forward Primer (25 μM)	0.5-1
Reverse Primer (25 μM)	0.5-1
Pfu DNA Polymerase (5 U/ μL)	0.5-1
Template	X
Nucleic Free Water	To 50

3. PCR condition: Perform 30~35 cycles of PCR amplification as follows:
4. Initial denaturation: 95 °C for 2 min
5. Then 30~35 cycles for DNA amplification as below:  
Denaturation: 95°C for 20 s  
Annealing: 55-65 °C for 30-60s (Annealing temperature based on primers)  
Extension: 72°C for 2-4min (Extension time depends on the length of PCR products)
6. Final Extension: 72- 74 °C for 5min

### MATERIALS REQUIRED, BUT NOT PROVIDED

Pipeting devices and accessories.  
Rnase and Dnase Free H<sub>2</sub>O (Catalog# TBS5026)

### RELATED PRODUCTS

2 x Sybr qPCR Super Mix (TBS4001)  
2 x Taqman PCR Master (TBS4002)  
2x Genotyping PCR Mix (TBS4003)  
2x Regular PCR Mix (TBS4004)  
2x PCR Red Mix (TBS4005)  
All-in-One RT Kit (TBS4006)  
RNase and DNase free Water (TBS5026)

**For Research Use Only.**